

In the claims:

Claims 2, 3, 6, 14-18, 21, 22, 25, and 28 have been withdrawn by the Examiner pursuant to a restriction requirement.

Please cancel claims 20 and 27.

Please amend claims 1, 12, 19, 23, 24, and 26 as follows:

1. (Currently Amended) A robotic domain reflectometry test system comprising:

- domain reflectometry instrumentation;
- a robotic arm; and
- a passive, high frequency probe assembly comprising a signal probe and a ground probe having a fixed, non-adjustable pitch, said probe further comprising a controlled impedance, said probe assembly being electrically connected to said domain reflectometry instrumentation, and being movedable by said robotic arm in an X, Y and Z axis for placing, ~~electrically connected to,~~ and retracting said signal probe and said ground probe from test points on an unloaded printed wiring board (PWB), said domain reflectometry instrumentation and said probe assembly configured to measure impedance values of said test points on said PWB ~~an electrical component to be tested by said robotic arm.~~

2. (Withdrawn)

3. (Withdrawn)

4. (Currently Amended) The system of claim 1 additionally comprising a probe assembly changing station accessible by said robotic arm, said probe assembly changing station comprising holders for a plurality of probe assemblies, each probe assembly from the plurality of probe assemblies comprising a different predetermined pitch.

5. (Currently Amended) The system of claim 4 additionally comprising a robotic control system comprising means for directing said robotic arm to acquire from said probe assembly changing station a probe assembly having a correct predetermined pitch for testing points of the electrical component having a same pitch.

6. (Withdrawn)

7. (Original) The system of claim 1 wherein said system can test traces having a length of between approximately 0.5 inches and 150 feet such that a standard deviation of domain reflectometry test result impedances is 0.03 ohms or less.

8. (Original) The system of claim 1 wherein said probe assembly mimics electrical characteristics of a coaxial structure.

9. (Original) The system of claim 1 wherein said system can test components comprising dimensions of between approximately 5.25 inches x 0.5 inches and 36 inches x 28.5 inches.

10. (Currently Amended) The system of claim 1 additionally comprising a robotic control system comprising means for automatically planning testing of the ~~electrical component~~ test points by importation of computer aided design data for the ~~electrical component~~ test points.

11. (Currently Amended) The system of claim 1 wherein said system records impedance and propagation delay and calculates a dielectric constant for each test point of the ~~electrical component~~.

12. (Currently Amended) A probe assembly changing station for a robotic domain reflectometry test system, said station being accessible by a robotic arm of said system, and said station comprising holders for a plurality of passive, high frequency probe assemblies, each probe assembly comprising a different pitch between a signal probe and a ground probe and further comprising a controlled impedance, said probe assemblies affixable to an end of a test head of the robotic arm and from which the robotic arm can without human intervention affix any of the plurality of probe assemblies on the test head and locate the probe assembly in an X, Y and Z axis and automatically and accurately place said signal probe and ground probe on traces on an unloaded PWB.

13. (Original) The probe assembly changing station of claim 12 wherein each of said probe assemblies comprises a passive, high frequency probe assembly comprising a signal probe and a ground probe having a fixed, non-adjustable pitch.

14. (Withdrawn)

15. (Withdrawn)

16. (Withdrawn)

17. (Withdrawn)

18. (Withdrawn)

19. (Currently Amended) A robotic domain reflectometry test system comprising:

domain reflectometry instrumentation;

a robotic arm;

a passive, high frequency probe assembly comprising a signal probe and a ground probe, said probe assembly being electrically connected to said domain reflectometry instrumentation said probe further comprising a controlled impedance, and being ~~moveable~~ able by said robotic arm in an X, Y and Z axis for placing, electrically connected to, and retracting said signal probe and said ground probe from test points on a trace of an unloaded PWB an electrical component to be tested by said robotic arm;

means for recording impedance and propagation delay for each test of the test points and means for calculating and recording a dielectric constant for each test of the test points.

20. (Canceled)

21. (Withdrawn)

22. (Withdrawn)

23. (Currently Amended) A robotic domain reflectometry test method comprising the steps of:

providing to a robotic arm a passive, high frequency probe assembly comprising a signal probe and a ground probe having a fixed, non-adjustable pitch said probe assembly comprising a controlled impedance, the probe assembly being electrically connected to domain reflectometry instrumentation; and

~~with the robotic arm moving the probe assembly in an X, Y and Z axis for placing proximate to, electrically connecting the probe assembly to, and retracting the probe assembly from test points on an electrical component to be tested~~ via the robotic arm.

24. (Currently Amended) A robotic domain reflectometry test method comprising the steps of:

providing within reach of a robotic arm a probe assembly changing station comprising holders for a plurality of passive, high frequency probe assemblies, said probe assembly comprising a controlled impedance, each probe assembly comprising a different pitch between a signal probe and a ground probe;

without human intervention affixing to ~~an end~~ a test head of the robotic arm ~~any one of~~ a selected probe assembly from the plurality of probe assemblies; and

maneuvering and the selected probe assembly in an X, Y and Z axis and automatically and accurately placing the selected probe assembly's signal probe and ground probe on test points.

25. (Withdrawn)

26. (Currently Amended) A robotic domain reflectometry test method comprising the steps of:

providing to a robotic arm a passive, high frequency probe assembly comprising a signal probe and a ground probe, said probe assembly comprising a controlled impedance, the probe assembly being electrically connected to domain reflectometry instrumentation;

~~with the robotic arm moving~~ maneuvering the probe assembly via the robotic arm; ~~above,~~

electrically connecting the probe assembly to, and retracting the probe assembly from test points on an electrical component to be tested; and

recording impedance and propagation delay for each test of the test points and calculating and recording a dielectric constant for each test of the test points.

27. (Canceled)

28. (Withdrawn)